

## Lab: Finding Energy

Purpose - To find out where energy comes from when a car rolls down a hill.

IV: height of the ramp (m)

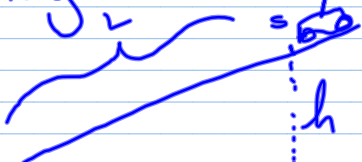
DV: kinetic energy of the car at the bottom of the ramp (J)

Mass of Car -  $33.3\text{g} = \underline{0.0333\text{kg}}$

Weight of Car -  $0.0333 \times 10 = \underline{0.333\text{N}}$

2-7-08

Height of Ramp -  $13\text{cm} = \underline{0.13\text{m}}$



Length of Ramp -  $90\text{cm} = \underline{0.9\text{m}}$

## Time Trials

1.31 s	1.16 s	1.34 s
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$$\text{Average Time} = \frac{1.31 + 1.16 + 1.34}{3} = 1.27 \text{ s}$$

$$\text{Average Speed} = \frac{\text{Length of Ramp}}{\text{Average Time}} = \frac{0.9 \text{ m}}{1.27 \text{ s}} = 0.709 \text{ m/s}$$

$$\text{Final Speed} = 2 \times \text{Average Speed} = 2 \times 0.709 \text{ m/s} = 1.418 \text{ m/s}$$

$$\text{Kinetic Energy} = \frac{\text{mass} (\text{final speed})^2}{2} = \frac{0.033 (1.418)^2}{2}$$

$$= 0.03348 \text{ J}$$

Gravitational  
Potential  
Energy

$$= \text{weight} \times \text{height} = 0.33 \times 0.13$$

$$= 0.04329 \text{ J}$$

